National Public Health Week 2006
Designing Healthy Communities: Raising Healthy Kids

Clean Air: Air Pollution, Asthma, Radon, Lead, Mercury Fact Sheet

Why is clean air important?
The short and long-term effects of air pollution on the environment are varied and profound. Acid rain, global warming, smog, and the depletion of the ozone layer are just a few of the most alarming results of pollution. Air pollution also poses a significant human health risk, causing serious respiratory and other illnesses.

Information obtained from "Air Pollution Effects" web site, U.S. Environmental Protection Agency (EPA) at: http://www.epa.gov/ebtpages/airairpollutioneffects.html.

How can I find out how clean the outside air is?
The Air Quality Index, or AQI, is an easy way to understand how clean the outside air is. It is a simple tool that provides a color-coded "picture" of current air pollution levels and health effects. The AQI allows people to take action to protect their health when we have more air pollution than we should.

What air pollutants are reported by the AQI? AQI pollutants include fine particles, ground-level ozone, carbon monoxide, sulfur dioxide and nitrogen dioxide. Air monitor data is collected every hour. A computer analyzes the information and automatically determines how clean the air is. The AQI tells people whether the air they breathe is currently "good," "moderate," "unhealthy for sensitive groups," "unhealthy," "very unhealthy" or "hazardous." During summer months, ground-level ozone is most likely to be the pollutant that has the most effect on the AQI.

How can I find out what today's AQI is? The AQI is available on the Michigan Department of Community Health (DEQ) "Michigan's Air" web page. Go to http://www.michigan.gov/deqair. The color-coded map of Michigan shows AQI locations across the state. The AQI is updated every hour throughout the day. You can also choose to view detailed AQI numerical values and the controlling pollutant at each monitor location. If you do not have access to the Internet, you can call the DEQ Environmental Assistance Center during office hours at 1-800-662-9278. Ask that your call be forwarded to the Air Quality Division.

Information obtained from the "Air Quality Index" fact sheet, DEQ at: http://www.deq.state.mi.us/documents/DEQ-AQD-AQIFACTS.PDF.

How can I find out how clean the air will be tomorrow or the next day?
EnviroFlash is a service that automatically delivers air quality forecasts directly to the public. It provides information so people can adjust their daily activities when poor air conditions are expected. People enrolled in EnviroFlash get the information they choose to receive via computer, e-mail, or a cell phone with text messaging capability. Using the same scale found in the AQI, DEQ meteorologists determine whether the air quality level for the next few days is likely to be "good," "moderate," "unhealthy for sensitive groups," "unhealthy," "very unhealthy" or "hazardous."

What air pollutants are reported by EnviroFlash? Forecast pollutants include ground-level ozone and fine particulate. EnviroFlash automatically sends the forecast message at the air quality level you select as well as notice when an "Action!" day (air quality advisory) is announced. Those with small children and people with cardio-pulmonary health problems (such as asthma) may choose to be notified when the air is predicted to be unhealthy for sensitive groups. People who work or exercise strenuously are in this category due to increased deep respiration. People who do not have health

risks and who are not as concerned about outdoor air quality may opt to be notified when the forecast is unhealthy.

How do I sign up for EnviroFlash? Current air quality information is already available via DEQ's website [http://www.michigan.gov/deqair] and AIRNow [http://www.airnow.gov/]. EnviroFlash is an additional service that sends air information directly to your computer or cell phone. To sign up, go to www.michigan.gov/deqair and click on the EnviroFlash icon. Then, mouse click on "sign-up" and follow five easy steps.

Information obtained from EnviroFlash web site: http://www.michigan.gov/deq/0,1607,7-135-3310_4195-101321--,00.html.

Asthma

Asthma is a serious chronic disease of the lungs that is caused by swelling (inflammation) in the airways. There is no cure for asthma, but it can be prevented and controlled with proper care. People with asthma can live normal, active lives.

Anyone can get asthma, at any age. More than 15 million people in the U.S., and more than a half million people in Michigan, have asthma. Asthma causes many missed school and work days, and many trips to the hospital. Asthma symptoms and attacks are almost always preventable. Health care providers, people with asthma, and their caregivers can learn ways to prevent, treat, and control asthma, and cut the number of hospital visits and missed days of school or work.

Information obtained from the Asthma Initiative of Michigan (AIM) web site, Michigan Department of Community Health (MDCH) and American Lung Association of Michigan (ALAM) at: http://www.getasthmahelp.org/index.asp.

Can air pollution make asthma symptoms worse and trigger attacks?

If you or your child has asthma, have you ever noticed symptoms get worse when the air is polluted? Air pollution can make it harder to breathe. It can also cause other symptoms, like coughing, wheezing, chest discomfort, and a burning feeling in the lungs.

Two key air pollutants can affect asthma. One is ozone (found in smog). The other is particle pollution (found in haze, smoke, and dust). When ozone and particle pollution are in the air, adults and children with asthma are more likely to have symptoms.

What steps can I take to protect my health from air pollution?

- Get to know how sensitive you are to air pollution.
  - Notice your asthma symptoms when you are physically active. Do they happen more often when the air is more polluted? If so, you may be sensitive to air pollution.
  - Also, notice any asthma symptoms that begin after you have been outdoors in polluted air. Air pollution can make you more sensitive to asthma triggers, like mold and dust mites. If you are more sensitive than usual to indoor asthma triggers, it could be due to air pollution outdoors.
- Know when and where air pollution may be bad.
  - Ozone is often worst on hot summer days, especially in the afternoons and early evenings.
  - Particle pollution can be bad any time of year, even in winter. It can be especially bad when the weather is calm, allowing air pollution to build up. Particle levels can also be high:
    - ✓ Near busy roads, during rush hour, and around factories.
    - ✓ When there is smoke in the air from wood stoves, fireplaces, or burning vegetation.
- Get up-to-date information from the Air Quality Index (http://www.deq.state.mi.us/aqi/), and sign up for air quality forecasts from EnviroFlash (http://www.michigan.gov/deqair).
- Plan activities when and where pollution levels are lower.

- Change your activity level when the air is polluted. Try to take it easier if you are active outdoors. This will reduce how much pollution you breathe.
- Listen to your body. If you get asthma symptoms when the air is polluted, stop your activity. Find another, less intense activity.
- Keep your quick-relief medicine on hand when you're active outdoors
- Consult your health care provider if you have asthma symptoms when the air is polluted.

Information obtained from "Asthma and Outdoor Air Pollution" fact sheet, EPA and Centers for Disease Control and Prevention (CDC); found at: http://www.epa.gov/airnow/health-prof/Asthma_Flyer_Final.pdf.

Radon

Radon comes from the natural (radioactive) breakdown of uranium in soil, rock, and water and gets into the air you breathe. Radon can be found all over the U.S. It can get into any type of building - homes, offices, and schools - and result in a high indoor radon level. However, you and your family are most likely to get your greatest exposure at home, where you spend most of your time.

Why should I be worried about radon?

Radon is impossible to see, smell, or taste, and it could be accumulating to unsafe levels in your home right now. Radon seeps into your home from the surrounding soil, and sometimes contaminates well water. It is the second leading cause of lung cancer in the U.S. – only cigarette smoking causes more lung cancer deaths. In fact, the Environmental Protection Agency and the U.S. Surgeon General have strongly recommended that all residences (except those above the second floor in multi-level buildings) be tested for radon.

Your family's risk of developing lung cancer from radon depends on the average annual level of radon in your home and the amount of time you spend there. The longer your exposure to radon, the greater the risk, and the risk is much greater for smokers.

What can I do about radon?

Radon is easy and inexpensive to detect, and homes with high levels can be fixed. However, it is up to you to find out whether radon is a problem in your home. Millions of people have tested their homes already. Because radon is completely invisible to sight, smell or taste, special detection kits are necessary to find a potential problem. Radon detection kits are inexpensive and easy to use. You can purchase a kit from your local health department, or from some hardware stores or other retail outlets. If you are not sure how to contact your local health department, call the DEQ Indoor Radon Program at 1-800-RADON GAS (1-800-723-6642) for assistance. After you have completed testing your home, you simply mail the entire kit to the manufacturer for analysis (analysis is often included in the price of the kit). You can choose either a short-term or a long-term testing kit.

Most test kits contain further information about testing. If your house does need to be fixed, you will get additional information along with your test results. If you'd like more information about radon, different types of radon tests, and a variety of related subjects right now, just contact your local health department, or call the DEQ Indoor Radon Program at 1-800-RADON GAS (1-800-723-6642).

Information obtained from "Reducing Radon Risks" fact sheet, DEQ Indoor Radon Program – 1-800-RADON GAS.

Lead Poisoning

What causes lead poisoning?

There are many places in a home that could put babies and children in danger of lead poisoning. Lead paint was used in many homes built before 1978. The older the home, the more likely that

windows, cupboards, doors, porches, and outdoor surfaces contain lead paint. Children are most often poisoned by lead dust and lead paint in older homes. Lead dust can come from disturbing areas with lead paint, opening and closing windows, and through normal wear and tear of painted areas. Lead dust falls to the floor and gets on children's hands and toys. It enters their bodies when they put their hands or toys into their mouths.

How can I tell if a child has been exposed to lead?
Lead poisoning can cause health and behavior problems in young children. It can make them less able to learn when they get to school. Lead poisoning can affect a child for a lifetime. A lead poisoned child may seem healthy or have any of these signs:

- Upset stomach
- Tiredness
- Loss of appetite
- Constipation
- Hearing problems
- Weight loss
- Hyperactivity
- Irritability
- Difficulty sleeping

When should my child be tested for lead poisoning?
Many children have blood lead tests as part of their regular care by a doctor or clinic. These tests are important for children who live or spend time in older houses that may have lead paint. Children should be tested for lead poisoning at one and two years of age or more often depending on their contact with sources of lead.

What can I do to protect my child from lead poisoning?

- Wash your child's hands, bottles, pacifiers, and toys often.
- Take off shoes when going into the house.
- Keep dust and dirt off floors, windowsills, and other surfaces.
- Use very cold tap water for drinking and cooking.
- Make sure children eat four to six small meals a day. Foods such as lean red meat, chicken, fish, milk, cheese, yogurt, collard greens, oranges, grapefruits, tomatoes, peppers, cereals, and dried fruit are good choices. Low fat foods are best for children over the age of two years.
- Check your home for lead hazards.
- Test the dirt in child play areas for lead.
- Talk to your property owner about fixing peeling and chipping paint.
- Learn how to safely remove lead paint.
- Avoid exposure to lead dust when remodeling by wetting work areas.
- Do not use a power sander, open-flame torch, heat gun above 1,100 degrees Fahrenheit, dry scraper, or dry sandpaper on painted surfaces that may contain lead.

Information obtained from "Is your child safe from lead poisoning?" fact sheet, Childhood Lead Poisoning Prevention Program, MDCH; found at: http://mich.gov/documents/Brogan2002ProgramBrochure_71285_7.pdf.

Mercury
Elemental mercury, also called "quicksilver," is a heavy, silvery, form of the metal mercury that is liquid at room temperature. It can slowly change from a liquid into a gas that is invisible to the naked eye. The gas or "vapors" that are released will start to fill a room if mercury is spilled indoors.

How can I be exposed to mercury?
Mercury is a very toxic or poisonous substance that people can be exposed to in several ways. If it is swallowed, like from a broken thermometer, it mostly passes through your body and very little is absorbed. If you touch it, a small amount may pass through your skin, but not usually enough to harm

you. Mercury is most harmful when you breathe in the vapors that are released when a container is open or a spill occurs.

What are the health effects from exposure to mercury?
Pregnant women, infants and young children are particularly sensitive to the harmful effects of mercury. The health effects that can result from mercury exposure depend on how much mercury you are exposed to and how long you are exposed.

Some of the acute effects (those that may come soon after exposures to high concentrations of mercury) are:

- Headaches, chills, fever
- Chest tightness, coughs
- Hand tremors
- Nausea, vomiting, abdominal cramps, diarrhea

Some effects that may result from chronic or longer-term exposure to mercury vapor are:

- Personality changes
- Decreased vision or hearing
- Peripheral nerve damage
- Elevated blood pressure

Children are especially sensitive to mercury and at risk of developing a condition known as acrodynia or “Pinks Disease” by breathing vapors or other exposure circumstances. The symptoms of this condition include:

- Reddening of the palms and soles of the feet
- Itching with peeling skin
- Increased heart rate and blood pressure
- Behavioral changes
- Muscle weakness
- Sweating and hair loss

Can I be tested to see if I have been exposed?
There are tests that a doctor can do to measure whether you have been exposed to too much mercury. These tests can show whether you have more mercury in your body than someone who has not been exposed to a mercury spill. A blood test is the most accurate for a recent exposure, for example one that occurred less than a week earlier. A urine test is better for measuring mercury when the exposure has happened over a period of several weeks or more. If your tests indicate a large exposure, there are medications your doctor may prescribe that will remove the mercury from your body. You may call the MDCH hotline (1-800-648-6942) or the national Poison Control Center toll free number (1-800-222-1222) if you or your doctor want help interpreting test results.

Information obtained from Mercury fact sheet, MDCH; found at:
http://www.michigan.gov/documents/mdch_MercurySpillFactsheet_85689_7.pdf.

Other helpful websites:

Asthma disparities in Michigan [http://www.getasthmahelp.org/DisparityinMIAsthma2005.pdf]
The “Disparities in Michigan's Asthma Burden” fact sheet is a brief statistical report highlighting the demographic and socioeconomic disparities in Michigan's asthma burden. The report was prepared by epidemiology staff at the Michigan Department of Community Health, with the assistance of Kevin

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